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| 09/603,950 | 06/27/2000 | Rustin W. Allred | TI-30851 | 4931 |

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| EXAMINER |
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CHAU, COREY P

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| ART UNIT | PAPER NUMBER |
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2644

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/603,950

Applicant(s)

ALLRED, RUSTIN W.

Examiner

Corey P Chau

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15, 17-30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 17-30 and 32 is/are rejected.
- 7) ☒ Claim(s) 14, 16, 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/27/00.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 10, 18-19, and 22-27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5046107 to Iwamatsu.

3. Regarding Claim 1, Iwamatsu discloses an audio compensation system for producing a sound compensated output signal (i.e. input level adjusting circuit), comprising: a volume control circuit for producing a volume-adjusted signal by applying a volume adjustment to an audio signal in response to a volume setting (Figs. 1 and 2), wherein the sound compensated output signal is responsive to the volume-adjusted

signal (column 3, lines 1-21); and circuitry for producing an amplified signal by amplifying a selected bandwidth of signals in response to the volume setting, wherein the sound compensated output signal is also responsive to the amplified signal (Figs. 1 and 2; column 3, lines 1-21; column 4, lines 33-58).

4. Regarding Claim 2, Iwamatsu discloses the circuitry for producing an amplified signal comprises a gain mapping circuit (9) for receiving a signal representative of the volume setting and producing in response an amplification control signal (column 3, lines 22-49); and wherein the circuitry for producing an amplified signal amplifies the selected bandwidth of signals in response to the amplification control signal (column 4, lines 33-58).

5. Regarding Claim 3, Iwamatsu discloses the circuitry for producing an amplified signal comprises a bandpass filter for providing the selected bandwidth of signals from the volume-adjusted signal (Fig. 2; column 4, lines 40-51).

6. Regarding Claim 10, Iwamatsu discloses the circuitry for producing an amplified signal comprises: a gain mapping circuit (9) for receiving a signal representative of the volume setting and producing in response an amplification control signal (Figs. 1 and 2; column 3, lines 25-61); and a bandpass filter for providing the selected bandwidth of signals from the volume-adjusted signal (Fig. 2; column 4, lines 33-58); and wherein the circuitry for producing an amplified signal amplifies the selected bandwidth of signals in response to the amplification control signal (Figs. 1 and 2; column 3, lines 1-21; column 4, lines 33-58).

7. Regarding Claim 18, Iwamatsu discloses the volume control circuit comprises a digital volume control circuit (49).
8. Regarding Claim 19, Iwamatsu discloses the volume setting comprises a digital number (49).
9. Regarding Claim 22, Iwamatsu discloses a first path comprising the volume control circuit (26) and coupling the volume-adjusted signal to a first input of a signal combiner (28) and wherein the circuitry for producing an amplified signal comprises a second path comprising: a bandpass filter (42)(column 4, lines 40-51) for providing the selected bandwidth of signals; and an amplifier for receiving the selected bandwidth of signals and amplifying the selected bandwidth of signals in response to the volume setting (32), and having an output coupled to a second input of the signal combiner (i.e. D/A conversion circuit 46, which read on an output coupled to a second input of the signal combiner because the output is not specific where it is coming from); and wherein an output of the signal combiner (28) is for providing the sound compensated output signal (Fig. 2) .
10. Regarding Claim 23, Iwamatsu discloses circuitry for disabling the circuitry for producing an amplified signal (i.e. power switch)(column 8, lines 30-35).
11. Regarding Claim 24 Iwamatsu discloses the volume control circuit and the circuitry for producing an amplified signal comprise a single path (i.e. digital straight channel)(Fig. 2).
12. Claim 25 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

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13. All elements of Claim 26 are comprehended by Claim 25. Claim 26 is rejected for the reasons stated above apropos to Claim 25.

14. Claim 27 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

15. Claims 1, 11-13, 15, 17, 25 and 28-30 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 5890126 to Lindemann.

16. Regarding Claim 1, Lindemann discloses an audio compensation system for producing a sound compensated output signal, comprising: a volume control circuit (Figs. 2-4) for producing a volume-adjusted signal by applying a volume adjustment (46) to an audio signal in response to a volume setting (i.e. controller 32 also provides a signal 36 representing loudness to envelope generator 40, which reads on a volume setting)(column 5, lines 12-23), wherein the sound compensated output signal (18) is responsive to the volume-adjusted signal (Figs. 2-4, reference 46; column 4, lines 14-42); and circuitry for producing an amplified signal by amplifying a selected bandwidth of signals in response to the volume setting (44)(Fig. 6; column 10, lines 13-24), wherein the sound compensated output signal is also responsive to the amplified signal (Figs. 2-4).

17. Regarding Claim 11, Lindemann discloses wherein the circuitry for producing an amplified signal comprises: a logarithm estimating circuit (12,12a-b) for receiving a value in response to the volume setting (46) and outputting a first estimated signal circuitry for modifying the first estimated signal to form a modified signal (i.e. output form

sum block 60); and an inverse logarithm estimating circuit (26,26a-b) for receiving the modified signal and outputting a second estimated signal (i.e. output from 26, 26a, or 26b), wherein the sound compensation output signal is responsive to the second estimated signal (Fig. 2-4).

18. Regarding Claim 12, Lindemann discloses the logarithm estimating circuit is a base 2 logarithm estimating circuit; and wherein the inverse logarithm estimating circuit is a base 2 inverse logarithm estimating circuit (i.e. Lindemann discloses bits, which is a base 2, therefore the logarithm estimating circuit is a base 2 logarithm estimating circuit and the inverse logarithm estimating circuit is a base 2 inverse logarithm estimating circuit)(column 3, lines 38-55).

19. Regarding Claim 13, Lindemann discloses the circuitry for modifying the first estimated signal comprises circuitry for modifying the first estimated signal according to a linear modification (abstract; Figs. 2-4; column 3, lines 38-55).

20. Regarding Claim 15, Lindemann discloses the circuitry for modifying the first estimated signal comprises circuitry for modifying the first estimated signal according to a linear modification (abstract; Figs. 2-4; column 3, lines 38-55).

21. Regarding Claim 17, wherein the circuitry for producing an amplified signal amplifies the selected bandwidth of signals in response to the second estimated signal (Figs. 3-4).

22. Claim 25 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

23. Claim 28 is essentially similar to Claim 11 and is rejected for the reasons stated above apropos to Claim 11.

24. Claim 29 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

25. Claim 30 is essentially similar to Claim 13 and is rejected for the reasons stated above apropos to Claim 13.

26. Claims 1 and 25 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6678382 to Peterson.

27. Regarding Claim 1, Paterson discloses an audio compensation system (Fig. 1) for producing a sound compensated output signal, comprising: a volume control circuit (122) for producing a volume-adjusted signal by applying a volume adjustment (200,116) to an audio signal in response to a volume setting (Fig. 1), wherein the sound compensated output signal is responsive to the volume-adjusted signal (Fig. 1); and circuitry for producing an amplified signal by amplifying a selected bandwidth of signals in response to the volume setting (110)(column 3, lines 41-67), wherein the sound compensated output signal is also responsive to the amplified signal (Fig. 1).

28. Claim 25 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5046107 to Iwamatsu.

31. Regarding Claims 4-9, Iwamatsu does not expressly disclose the bandpass filter comprises a second-order infinite impulse response filter, the bandpass filter is centered at a fixed bass-region frequency, the bandpass filter comprises an adjustable center frequency, the bandpass filter comprises a fixed bandwidth, the bandpass filter comprises an adjustable bandwidth, and the bandpass filter comprises an adjustable center frequency and an adjustable bandwidth. However it would have been obvious to one having ordinary skill in the art that the bandpass filter can be modified to obtain a second-order infinite impulse response filter, a centered at a fixed bass-region frequency, an adjustable center frequency, a fixed bandwidth, an adjustable bandwidth, and an adjustable center frequency and an adjustable bandwidth by utilizing the digital equalizer (42) to make changes by setting a center frequency, Q and level as desired with respect to each divided band. The digital equalizer is also capable of freely setting low cut and high cut frequencies for and gradients of the slopes of the cut-off frequencies (rate of attenuation) (column 4, lines 40-51). Therefore providing different characteristics as claimed in Claims 4-9.

32. Claims 20-21 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5046107 to Iwamatsu in view of U.S. Patent No. 5784476 to Bird.

33. Regarding Claim 20 and 21, Iwamatsu does not expressly disclose the volume control circuit comprises circuitry for softening changes in the volume setting. However it would have been obvious to one having ordinary skill in the art to utilize circuitry for softening changes in the volume setting in order to prevent the gain changes from taking place instantaneously, which will not cause disturbance to the listener from the volume increasing or decreasing instantaneously as taught by Bird (column 3, lines 34-67).

34. Claim 32 is essentially similar to Claim 21 and is rejected for the reasons stated above apropos to Claim 21.

Allowable Subject Matter

35. Claims 14, 16, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P Chau whose telephone number is (703)305-0683. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on (703)305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 21, 2005

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XU MEI
PRIMARY EXAMINER